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Remarks

Thorough examination by the Examiner is noted and appreciated.

The claims have been further amended to clarify Applicants claim language and incorporate limitations from dependent claims into the independent claims to clearly further distinguish over the prior art.

No new matter has been added.

Support for the amendments is found in the previously presented claims.

Claim Rejections under 35 USC 103(a)

1. Claims 1, 2, 5, 9, 11, 17, 18, and 18 stand rejected under USC 103(a) as being as obvious over Harada (6,402,844 in view of Fukada (5,733,375).

Harada et al. disclose a vapor generator and a method for

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carrying out vapor generation of HDMS in order to treat a semiconductor wafer in a down stream process. The apparatus and the method of Harada et al. overcomes the problem of a reduction of the temperature of the heated wafer in the process chamber as vapor is passed from the vapor generator to the wafer treatment chamber (see Abstract; col 1, lines 51- col 2, line 8). Harada disclose intermittently supplying the vapor from the vapor generator, and where the process chamber is being evacuated while the vapor is being supplied (col 2, lines 34-44; col 4, lines 28-35) and the exhaust or evacuation is stopped at the same time the vapor supply is stopped (col 4, lines 36-54).

Harada et al. disclose that the vapor generator (Figure 6) may have a plurality of nozzles (**shown in cross section in a linear pattern**) as opposed to a single nozzle (item 33, Figure 1) in order to **increase the amount of N₂ sprayed on the surface of** the HDMS solution compared to one nozzle (i.e., to increase the concentration of HDMS supplied to the process chamber (col 6, lines 35-45). Harada et al. further teach that when the vapor is not being supplied to the process chamber the concentration of HDMS continues to evaporate and increase in the vapor (col 5, lines 7-20).

Harada et al. fails to disclose several elements of

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Applicants disclosed and claimed invention including those elements in **bold type**:

With respect to claim 1:

"A primer tank for generating a primer vapor for treating a substrate with reduced primer droplet formation and improved deposition uniformity of said primer vapor on said substrate comprising:

a tank body for containing a liquid primer to form a planar exposed surface of said liquid primer, said planar exposed surface comprising a liquid vapor interface; and,

a nozzle assembly comprising a nozzle plate, said nozzle plate comprising a plurality of openings arranged in a planar dispersed pattern, said planar dispersed pattern comprising radially extending rows of said plurality of openings, said plurality of openings disposed above said planar exposed surface and arranged for directing a plurality of gas streams from said planar dispersed pattern onto said planar exposed surface to form said primer vapor in a vapor collection space above said liquid vapor interface."

With respect to claim 9:

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"A primer tank for generating a primer vapor for treating a substrate with improved deposition uniformity of said primer vapor on said substrate, comprising:

a tank body for containing a liquid primer to form a planar exposed surface of said liquid primer; and,

a nozzle assembly provided in said tank body, said nozzle assembly having a gas inlet pipe for receiving a primary gas stream;

a housing having a housing interior provided in fluid communication with said gas inlet pipe; and

a nozzle plate in downstream fluid communication with said housing, said nozzle plate having a plurality of openings comprising a planar dispersed pattern, said planar dispersed pattern comprising radially extending rows of said plurality of openings, said planar dispersed pattern adapted to receive the primary gas stream and eject a plurality of secondary gas streams onto said planar exposed surface to create a primer vapor in a vapor collection space above said exposed surface."

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With respect to claim 17:

"A method of generating a primer vapor from a liquid primer for treating a substrate to reduce primer vapor droplet formation and improved deposition uniformity of said primer vapor on said substrate comprising the steps of:

providing a primer tank having a tank body;

providing the liquid primer in said tank body to form a planar exposed surface of said liquid primer, said exposed surface comprising a liquid vapor interface;

directing an inert gas comprising a plurality of gas streams from a plurality of openings, said plurality of openings comprising a planar dispersed pattern formed in a plate surface of a nozzle plate, said planar dispersed pattern comprising radially extending rows of said plurality of openings, said plurality of gas streams directed onto said planar exposed surface to form a vapor above said liquid vapor interface, said vapor comprising said liquid primer and said inert gas; and,

transferring said vapor to a downstream process to deposit

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said vapor on said substrate."

Examiner argues that "the nozzle assembly is formed integrally in the ceiling of the tank", but does not point to any citation supporting such an assertion (there is not discussion or suggestion in Harada et al. that the nozzles (33) are integrally formed). Examiner then argues that the ceiling of the tank "can obviously be in the form of a plate" and therefore "can obviously be a nozzle plate" comprising a plurality of openings". However, Harada et al. disclose a linear pattern of nozzles (see Figure 6) and nowhere disclose or suggest a planar dispersed pattern of nozzles or openings in a nozzle plate.

Examiner has previously (Office action of 12/29/2006) provided a citation to Websters II New Riverside Dictionary where the term Planar is defined as "1. Of, pertaining to, or located in a **plane** 2. Flat 3. Having a two-dimensional characteristic."

Examiner erroneously argues without any support or disclosure in Harada that the nozzles of Harada shown in cross section as a linear line of nozzles is a "planar dispersed pattern". Examiner cites no support for his erroneous interpretation of the plain meaning of Applicants language and

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such interpretation is clearly contrary to what one of ordinary skill in the art would understand a "planar dispersed pattern" to mean. Nevertheless Applicants have amended their claims to explicitly claim a "two-dimensional planar dispersed pattern".

See e.g., MPEP 2111.01:

During examination, the claims must be interpreted as broadly as their terms reasonably allow. This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

When not defined by applicant in the specification, the words of a claim must be given their plain meaning. In other words, they must be read as they would be interpreted by those of ordinary skill in the art. *In re Sneed*, 710 F.2d 1544, 218 USPQ 385 (Fed. Cir. 1983).

Examiner alternatively argues that the particular number of openings and the location "would have been a prima facie obvious matter of choice for one skilled in the art". Examiner cites no support for this standard of obviousness. Applicants reproduce the concept of obvious design choice found in the MPEP 2144.04 under "rearrangement of parts"

C. Rearrangement of Parts

In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read

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on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.); *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design choice). However, "The mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device." *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984).

In the present case, Harada et al. recognize or proved a solution to the problem that Applicants have recognized and solved:

"A primer tank for generating a primer vapor for treating a substrate **with reduced primer droplet formation and improved deposition uniformity of said primer vapor on said substrate**"

Rather, the teachings of Harada et al. teach **more nozzles for increasing an amount of N2 supplied (i.e., at higher flow rates and pressure) would create the very problem that Applicants have recognized and solved.**

Thus, Examiners argument of "obvious choice" is misplaced

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and without support.

Examiner argues that the plural linear nozzles of Harada are **inherently** capable of having exactly the same effect as Applicants' plural nozzles.

Applicants respectfully demand that Examiner provide support for his assertion of inherency, apparently based on personal knowledge.

"The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ (Fed. Cir. 1993).

"To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." *In re Oelrich*, 666 F.2d 578,, 581-582, 212 USPQ 323, 326 (CCPA 1981).

In addition, even if the above statement were true, such a fact would not be sufficient to make out a *prima facie* case of

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obviousness.

"Even if the prior art device performs all the functions recited in the claim, the prior art cannot anticipate the claim if there is any structural difference. It should be noted, however, that means plus function limitations are met by structures which are equivalent to the corresponding structures recited in the specification." *In re Ruskin*, 347 F.2d 843, 146 USPQ 211 (CCPA 1965) as implicitly modified by *In re Donaldson*, 16 F.3d 1189, 29 USPQ2d 1845 (Fed. Cir. 1994).

Examiner state that "Fukada has been added to illustrate that is was known in the prior art that the ceiling of an HMDS vaporizer can successfully be formed as a plate". However, Fukada discloses a **single pipe** (110; Figure 6) for supplying nitrogen gas where the single pipe extends through an opening (27) (col 8, lines 18-26) in the cap (21).

Even modifying Harada et al. base on the teachings of Fukada, the fact that either Harada or Fukada disclose that the **ceiling of the vaporizer tank is a plate** or that a **single or a linear arrangement of pipes may extend through the plate** does not further produce or suggest Applicants invention.

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"First, there must be some **suggestion or motivation**, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a **reasonable expectation of success**. Finally, the prior art reference (or references when combined) **must teach or suggest all the claim limitations**. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Examiner is further mistaken in asserting "the upstream end of the nitrogen gas supply line in Figure 6 of Harada is "a gas inlet pipe for receiving a primary gas stream" or that Figure 6 shows a manifold section. Rather Harada shows arrows representing a supply of N₂ to the individual pipes (33) that extend through the top surface of the vaporizer body (31) without any **manifold present**, as the plain meaning of that term would be understood by one of ordinary skill in the art.

Examiner is mistaken that Harada discloses Applicants claimed structure including "said planar dispersed pattern **comprising radially extending rows** of said plurality of

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openings".

Examiner argues that "it is noted that Figure 6 of Harada is a schematic diagram and that the particular number of openings and the particular location of the opening would have been prima facie obvious matter of choice for one skilled in the art"

Examiner cites no case law or MPEP portion where the above statement is recognized as a standard for an obviousness determination. Examiner is required to show some suggestion or motivation in the prior art, some expectation of success, and finally all of applicants claimed limitations. The mere fact that something could have been done is insufficient.

Moreover, Examiner has not shown in the prior art a recognition of the problem solved by Applicants structure or a teaching or suggestion that Applicants structure is desirable, or would successfully accomplish a particular result.

As noted above, Harada et al. discloses a plurality of **linearly arranged nozzles** (in cross section) to allow an **increased amount (flow) of N2 gas to be directed at the surface** (i.e., with **increased droplet formation**), thereby presenting the very problem that Applicants invention solves.

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"First, there must be some **suggestion or motivation**, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a **reasonable expectation of success**. Finally, the prior art reference (or references when combined) **must teach or suggest all the claim limitations**. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

"The mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device." *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984).

2. Claims 3 and 10 stand rejected under 35 USC 103(a) as being unpatentable over Harada et al. in view of Fukada, above, in

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further view of Applicants description of the prior art.

Applicants reiterate the comments made above with respect to Harada et al. and Fukada.

Even assuming arguendo a proper motivation for combining Applicants description of the prior art with Harada et al., such combination does not produce or suggest Applicants disclosed and claimed invention.

The fact that Applicants discussion that liquid level sensors were known in the prior art is not sufficient to support a finding of obviousness, or to modify Harada et al.

"The fact that references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references." *Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993)*.

"Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success **must both be found in the prior**

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art, and not based on applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

3. Claim 19 stands rejected under 35 USC 103(a) as being unpatentable over Harada et al. in view of Fukada, above, in further view of Applicants description of the prior art.

Applicants reiterate the comments made above with respect to Harada et al., Fukada and Applicants description of the prior art.

Examiner points to no motivation, other than impermissibly found in Applicants disclosure to find motivation to modify Harada et al. Moreover, Harada et al. nowhere suggests or discloses that their process could be successfully carried out at subatmospheric pressures, rather, Harada et al. disclose that the HDMS is supplied to the treatment chamber 2 **at atmospheric pressure**, thereby also **disclosing the N2 gas is supplied to the HDMS vaporizer chamber 31 at atmospheric pressure** (see col 5, lines 31-35).

"Finally, the prior art reference (or references when combined) **must teach or suggest all the claim limitations**. The teaching or suggestion to make the claimed combination and the

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reasonable expectation of success **must both be found in the prior art**, and not based on applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

4. Claims 1, 2, 5, 9, 11, 13, 17, 18, and 20-24 stand rejected under 35 USC 103(a) as being unpatentable over Harada et al. in view of Fukada, above, in further view of Bowles (853,915).

Applicants reiterate the comments made above with respect to Harada et al. and Fukada

Even assuming arguendo, Bowles is analogous art, and a proper motivation for modifying Harada et al. with the teachings of Bowles, the fact that Bowles teaches a **carburetor for supplying carbureted air to an engine where air supply pipes (7)** are supplied to chambers (3) separated by a partition (2a) to prevent violent splashing "from one end of the compartment to another" (page 1, lines 65-70) and teaches a pair of perforated **partitions (2, 11)** (Fig 1, Fig 4) forming a **mixing chamber** (gas collection space) above the gasoline surface to collect the **carbureted air** and then passing the carbureted air (from the mixing chamber) downstream in response to periodic suction (**including periodic backpressure**) produced by the engine cycles downstream (see page 1, lines 86-95; page 2, lines 25-45; lines

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54-57), does not further help Examiner in producing Applicants invention.

Examiner apparently suggests using the gas collection space and mixing chamber of Bowles (including the perforated partitions 4) in place of the linear nozzles of Harada, and erroneously argues that the nozzle plate (4) (see Figure 2, 4) is an integral part of a carrier gas supply manifold.

Examiner is clearly misreading the teachings of Bowles who teaches that the gas is supplied by single pipes 7 and that the perforated partitions (4), which Examiner erroneously refers to as a nozzle plate for delivering gas. Rather, the perforated partitions (4) (see Figure 2) is in a mixing chamber for collecting the evaporated gas (page 1, lines 95-100; page 2, lines 30-37).

Examiner, further misinterpreting the disclosure of Bowles, states that "the rows of opening of Bowles are arranged on lines that pass through the center of the nozzle plate 4 and therefore the rows of openings extend radially".

Applicants reiterate that the plate for is a rectangular perforated plate (has perforations in a rectangular array) and is

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not a nozzle plate (i.e. there are no nozzles in the perforated plate) (Examiner is erroneously confusing the nozzle openings 7 of Bowles with the perforated plate 4 of Bowles). In addition, Examiner is misinterpreting the plain meaning of Applicants claim language as would be understood by one of ordinary skill in the art. That is, the rectangular array of openings in the perforated plate (4) of Bowles or the nozzle openings 7 (shown extending through rectangular compartment housing 5 surrounding the rectangular perforated plate 4 of Bowles) nowhere shows radially extending rows of openings (i.e., there is no radius disclosed in Bowles in the rectangular perforated plate (4) or the rectangular compartment housing (5) of Bowles.

Examiner is further clearly mistaken in the assertion that Bowles anywhere teach that perforated plate is a nozzle plate or that it successfully accomplishes the goals of Harada et al. (supplies gas to a surface of HDMS liquid to effect evaporation).

As noted the perforated plates of Harada et al. collects evaporated gas and is in a mixing chamber above the surface of the gas or vertically separates separate gas containing chambers (perforated plates 2 in Figure 2).

Thus, Bowles nowhere suggests or discloses:

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"a nozzle assembly comprising a nozzle plate, said nozzle plate comprising a plurality of openings arranged in a two-dimensional planar dispersed pattern, said planar dispersed pattern comprising radially extending rows of said plurality of openings, said plurality of openings disposed above said planar exposed surface and arranged to direct a plurality of gas streams from said planar dispersed pattern onto said planar exposed surface to form said primer vapor in a vapor collection space above said liquid vapor interface."

For example, modifying Harada et al. with the perforated partitions for collecting gas in the mixing chamber of Bowles would make the plurality of nozzles of Harada et al. unsuitable for their intended purpose of supplying an increased flow rate (amount) of N₂ to the HDMS surface, since the perforated partitions of Bowles are designed for collecting gas into an overlying mixing chamber and are nowhere taught or suggested to be able to operate to supply gas, and would not work to supply gas to substitute for the linear nozzle arrangement of Harada. That is the perforated plates operate by a different principle of operation (collection of gas) and the use of the perforated plates of Bowles in the device of Harada would make the gas delivery operation of Harada unsuitable for its intended purpose (delivery of gas). Thus, such modification of Harada is

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impermissible as a matter of law.

"If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious." *In re Ratti*, 270 F.2d 810, 123, USPQ 349 (CCPA 1959).

"If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Moreover, Examiner stated motivation for modification of Harada to use the perforated plate of Harada is nowhere found in either Harada or Bowles: "it would have been obvious to use this arrangement of openings in the nozzle plate of Harada because Bowles teaches that it successfully accomplishes the goal of Harada. Nowhere does Bowles teach that the rectangular perforated plate for collecting gas accomplishes any goals of Harada including delivery of gas.

"First, there must be some **suggestion or motivation**, either

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in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. **Second**, there must be a **reasonable expectation of success**. **Finally**, the prior art reference (or references when combined) **must teach or suggest all the claim limitations**. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

5. Claims 3 and 10 stands rejected under 35 USC 103(a) as being unpatentable over Harada et al. in view of Fukada and Bowles, above, in further view of Applicants discussion of the prior art. Applicants reiterate the comments made above with respect to Harada et al., Fukada, Bowles and Applicants discussion of the prior art.

Applicants reiterate the comments made above with respect to Harada et al., Fukada and Bowles.

Even assuming arguendo a proper motivation for combining Applicants description of the prior art with Harada et al., such

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combination does not produce or suggest Applicants disclosed and claimed invention.

The fact that Applicants discussion that liquid level sensors were known in the prior art is no sufficient to support a finding of obviousness, or to modify Harada et al.

"The fact that references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references." *Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993)*.

6. Claim 19 stands rejected under 35 USC 103(a) as being unpatentable over Harada et al. in view of Fukada and Bowles, above, in further view of Applicants description of the prior art.

Applicants reiterate the comments made above with respect to Harada et al., Fukada, Bowles and Applicants description of the prior art.

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Examiner points to no motivation, other than impermissibly found in Applicants disclosure to find motivation to modify Harada et al. Moreover, Harada et al. nowhere suggests or discloses that their process could be successfully carried out at subatmospheric pressures, rather, Harada et al. disclose that the **HDMS is supplied to the treatment chamber 2 at atmospheric pressure**, thereby also disclosing the N2 gas is supplied to the HDMS vaporizer chamber 31 at atmospheric pressure (see col 5, lines 31-35).

"First, there must be some **suggestion or motivation**, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a **reasonable expectation of success**. Finally, the prior art reference (or references when combined) **must teach or suggest all the claim limitations**. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." *In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)*.

Examiners Arguments

Examiner, in misinterpreting the disclosure of Bowles, as

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well as the plain language of radially extending states that "the rows of opening of Bowles are arranged on lines that pass through the **center of the nozzle plate 4 and therefore the rows of openings extend radially**".

Applicants reiterate that the plate for is a **rectangular perforated plate** (has perforations in a **rectangular array**) and is **not a nozzle plate** (i.e. there are no nozzles in the perforated plate) (Examiner is erroneously confusing the nozzle openings 7 of Bowles with the perforated plate 4 of Bowles). In addition, Examiner is again misinterpreting the plain meaning of Applicants claim language as would be understood by one of ordinary skill in the art. That is, the **rectangular array** of openings in the perforated plate (4) of Bowles or the nozzle openings 7 (shown extending through rectangular compartment housing 5 surrounding the rectangular perforated plate 4 of Bowles) **nowhere shows radially extending rows of openings** (i.e., **there is no radius** disclosed in the **rectangular** perforated plate (4) of Bowles or the **rectangular** compartment housing (5) of Bowles.

Examiner has further mischaracterized Applicants previous statements by stating that "applicants have argues that the perforated partitions 2 and 11 used by Bowles prevents the teachings of this reference from being combinable with Harada.

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It is noted, however, that Bowles was cited in the rejection merely for his teachings regarding the arrangement of plural carrier gas inlet nozzles in a vaporizer".

Applicants therefore reiterate their previously made statements that firstly, Examiner is misinterpreting the disclosure of Bowles and confusing a rectangular perforated plate (4) (for collecting gas) with nozzle openings (7) in a rectangular compartment housing (for delivery gas), i.e., that Bowles nowhere teaches what Examiner asserts (radially extending rows of openings). Secondly, Applicants further reiterate above that since the **perforated plates** of Bowles are **not** used to **deliver** a gas stream but to **collect** an evaporated gas stream (gas passes through **perforated plated** into a collection chamber above), thus working by a different principle of operation, that Examiner is prevented **as a matter of law** from modifying Harada based on the Harada, even assuming arguendo Bowles is analogous art to Harada, which Applicants do not concede. That is, modifying Harada et al. to have a perforated plate for **collecting** gas would **change the principle of operation of the device of** Harada (**nozzles for delivery gas**) and make it unsuitable for its intended purpose (**delivery of gas**).

"If the proposed modification or combination of the prior

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art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie obvious.*" *In re Ratti*, 270 F.2d 810, 123, USPQ 349 (CCPA 1959).

"If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Finally, even if the rectangular perforated plate of Bowles having a rectangular array of openings was somehow used to modify the linear nozzles of Harada , such modification does not produce Applicants invention including radially extending rows (that is there is no radius in the rectangular plate of Bowles).

Finally, there is no suggestion in any of the references that would suggest modification of Harada and Fukada to achieve Applicants disclose structure or method. But rather, the teachings (structure) of the cited references nowhere recognize the problem that Applicant have recognized and solved by their claimed invention, Rather all the cited references present the very problem that Applicants invention has overcome.

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Conclusion

The cited references, either singly or in combination, **do not produce or suggest** Applicants invention, and therefore fail to make out a *prima facie* case of obviousness.

The Claims have been amended to further clarify Applicants' claim language to overcome Examiners interpretation of Applicants claim language. Applicants respectfully request a favorable reconsideration of Applicants' claims.

Based on the foregoing, Applicants respectfully submit that the Claims are now in condition for allowance. Such favorable action by the Examiner at an early date is respectfully solicited.

In the event that the present invention as claimed is not in condition for allowance for any reason, the Examiner is respectfully invited to call the Applicants' representative at his Bloomfield Hills, Michigan office at (248) 540-4040 such that necessary action may be taken to place the application in a condition for allowance.

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Respectfully submitted,

Tung & Associates

Randy W. Tung
Reg. No. 31,311
Telephone: (248) 540-4040